

WE CLAIM:

1. A method of providing communication between a telephone caller and a callee of the telephone call, comprising:

- a) linking a switched telephone network with an internet network via a telephone network/internet domain network interface;
- b) detecting an attempted call within the switched telephone network;
- c) upon detection of the attempted call, having the switched telephone network inform the telephone network/internet domain network interface to provide a message reporting details of the attempted call to the callee via the internet network.

2. The method of providing communication between a telephone caller and a callee of the telephone call according to Claim 1, wherein the switched telephone network is a public switched telephone network.

3. The method of providing communication between a telephone caller and a callee of the telephone call according to Claim 2, wherein the internet network is the public Internet.

4. The method of providing communication between a telephone caller and a callee of the telephone call according to Claim 3, wherein the public switched telephone network informs the telephone network/internet domain network interface to provide the message via an Internet protocol to the callee of the public switched telephone network call when an abnormality is detected in the public switched telephone network which prevents the public switched telephone network from completing the call connection between the caller and the callee.

5. The method of providing communication between a telephone caller and a callee of the telephone call according to Claim 4, wherein the telephone network/internet domain network interface provides the message via an Internet protocol to a caller-selected list of recipients as well as the callee of the public switched telephone network call.

6. A method of providing communication between a telephone caller and a callee of the telephone call according to Claim 1, wherein the callee informs at least one of the public switched telephone network or the Internet domain network interface to provide the message to the callee in real time via an Internet protocol when the attempted call is intended for the telephone number of the callee.

7. A method of providing communication between a telephone caller and a callee of the telephone call according to Claim 1, wherein the message details at least one of the telephone number trying to reach the callee, the caller identification of the telephone number trying to reach the callee, and the time of the attempted call.

8. A method of providing communication between a telephone caller and a callee of the telephone call according to Claim 1, wherein the message is an Instant Message provided in real time.

9. A method of providing communication between a telephone caller and a callee of the telephone call according to Claim 1, wherein the message is a text message.

10. A method of providing communication between a telephone caller and a callee of the telephone call according to Claim 1, wherein the message is an email.

11. A method of providing communication between a telephone caller and a callee of the telephone call, comprising:

- a) linking a public switched telephone network with an Internet domain network via a service control point extension for the public switched telephone network and an SIP proxy server for an Internet domain network service provider;
- b) detecting an attempted public switched telephone network (public switched telephone network) call within the public switched telephone network;
- c) upon detection of the attempted public switched telephone network call, having the public switched telephone network inform the Internet domain network service provider to provide a message reporting details of the attempted call

in real time to the callee of the public switched telephone network call via an Internet protocol.

12. A method of providing crossover services, between an internet domain and a switched telephone network domain comprising the steps of:

a) starting an IM agent for a callee on an Internet-capable device to express interest in receiving notifications of incoming calls on a telephone line of the callee;

b) having the IM agent register the interest of the callee with the telephone network;

c) having the telephone network authenticate the IM agent and register the Internet address of the IM agent and the interest of the callee;

d) having the telephone network undertake appropriate actions to ensure that incoming calls to the callee telephone line result in a notification action;

e) executing the actions in step d) a when a caller on another line calls the callee telephone line by capturing the incoming call information and creating an Instant Message out of the incoming call information;

f) routing the Instant Message through the Internet to the Internet address of the IM agent of the callee registered in step c); and

g) displaying the Instant Message on an Internet-capable device for the consumption of the callee.

13. A method of providing crossover services, between an internet domain and a switched telephone network domain comprising the steps of:

a) starting an IM agent for a caller on an Internet-capable device to express interest in providing outgoing call notifications of the caller to the callee or other designated phone lines;

b) having the IM agent register the preference of the caller with the telephone network to inform callees about an attempt by the caller to call the callee or any of the designated telephone lines,

c) having the telephone network authenticate the IM agent and register the Internet address of the IM agent and the preferences of the caller;.

d) having the telephone network undertake appropriate actions to ensure that outgoing calls to the callee or designated telephone lines identified in step b) result in a notification action to the callee list when a telephone network service failure is detected within the telephone network;

e) executing the actions in Step d) when a telephone network interruption/service failure is detected within the telephone network including having the telephone network capture the incoming call information and

f) creating a message out of the incoming call information;

g) routing the message through the Internet to the Internet address of the IM agent of the callee or designated telephone lines registered in step c); and

h) displaying the message in Internet-capable devices of the callee, or of persons on the list of designated telephone lines.